

FOLIO

Response to Government White Paper

University Pumps for Establishment of Alberta Institute of International Affairs

The provincial government's call for public response to its White Paper, *Proposals for an Industrial and Science Strategy for Albertans: 1985 to 1990* has been received loud and clear. On 25 September, for example, 26 presentations reached the attentive ears of Keith Alexander, MLA, Edmonton Whitemud (Chairman); Dick Johnston, Minister of Advanced Education; Hugh Planche, Minister of Economic Development; and Larry Shaben, MLA, Lesser Slave Lake. The eighth presentation of the day was made by the University of Alberta. President Horowitz, who read the 16-page document, was accompanied by Vice-President (Academic) Meekison, architect of the document, and John McDonald, Dean of Science. The text follows:

The University of Alberta welcomes this opportunity to comment on the provincial government White Paper, *Proposals for an Industrial and Science Strategy for Albertans: 1985 to 1990*. Before doing so, we would like to congratulate the government for taking this initiative and for seeking public input into the formation of what is unquestionably a major policy thrust.

The White Paper addresses a number of important matters and while it is tempting to offer comments on all of them, the focus of this response is on those portions of the paper which directly affect or relate to the universities of the province and, specifically, to the University of Alberta.

As the White Paper clearly recognizes, universities in general have a role to play in the economic de-

velopment of our country and province. At the University of Alberta, we accept this role willingly and offer our commitment to work with industry and government in an effective way towards the beneficial economic development of Alberta. The University of Alberta can play an instrumental role in Alberta's industrial and science strategy. As the White Paper recognizes, "the private sector gives considerable weight in plant location decisions to the proximity of world-class universities," (p. 35). This observation more than any other must be kept in mind as the policies which emerge from consideration of the White Paper are developed.

In creating and maintaining world class universities it cannot be over-emphasized that it is the total intellectual environment and necessary supporting services which must be nurtured. To be sure, some areas may receive greater priority but excellence in one field tends either to spawn excellence in other fields of endeavour or to lapse into mediocrity. Clearly our goal is for excellence and it is thus not enough for a handful of sectors to be improved. The purpose of the university is to teach people how to think and to give them inspiration and direction by world research leaders. Given the wide spectrum of Faculties and disciplines represented within the university, it is necessary to ensure that the quality of both the educational programs and the research programs be high in a broad range of areas and not just one or two designated areas.

Skills vs. Education

The White Paper poses the question, "To what extent should the Provincial Government press universities and other educational entities to prioritize job directed versus general education?" It then asks two other questions: "Who is so perceptive to know which skills will be actually needed in

1990 and what if we guess wrong?" It is difficult to predict the educational needs of tomorrow's work force and by structuring requirements too narrowly and specifically, the benefits of a general education will be undermined.

The examples of the benefits of a liberal education and pure scientific research are numerous. Maxwell and Faraday revolutionized the world by

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United Way Campaign Underway

Last year was a success story for the United Way Campaign on campus. Through the efforts of the many volunteers who conducted the canvass, the participation rate increased to 18 percent. It was 11 percent the previous year. However, the University's participation is still well below other employee groups such as NAIT (36 percent) and the five major banks (60 percent).

A letter has been sent to each staff member suggesting a yardstick that can be applied to determine what a fair and reasonable gift might be. Like last year, a canvasser will deliver the campaign materials. The campaign goal of \$180,000 is the same as last year. This is a very reasonable objective for the 5,900 staff members of this University.

There are three points that should be considered:

- No gift should be considered to be too small. If many give only a little, the goal will be reached.
- Gifts may be directed to the agency

or agencies of your choice.

- This year, receipts are required to obtain any deduction for income tax purposes.

Campaign Co-ordinator Hugh King will be pleased to answer any questions about the campaign. He can be reached at 432-3644. □



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- New Writer-in-Residence
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their fundamental research on the nature of electricity and magnetism. They were not aiming for the electrification of the world, but that came as a long-term result of their studies. Their country, the United Kingdom, benefited enormously from their leadership. Crick and Watson were not out to invent genetic engineering; they just wanted to understand how genetic information is encoded and transmitted. Genetic engineering resulted from their pure research.

Care must also be taken in placing too much emphasis on "training" and "skills." There is no doubt that training and the acquisition of skills are crucial—not only in universities but also in other post-secondary institutions. Many of the skills required for modern plants are quite modest and can be readily developed in virtually any group of high-school graduates. Skills alone are not sufficient for managerial personnel and for those who aspire to become managers.

What is also needed is a high quality general education which gives graduates a knowledge and understanding of people, society and its institutions (including economic and political) and culture. Training alone will not convey or develop this ability. Care must be taken to ensure that priority funding does not lead to a decline or deterioration in overall education or else Alberta's competitive position may likely be eroded during

the next generation.

Concomitant with this view of the university is an appreciation of the need for a high quality primary and secondary educational system. One must not lose sight of a number of elements necessary for a basic education such as writing, mathematics, social studies, science, languages, the humanities, the fine arts, physical development, and, as the White Paper recognizes, knowledge of computers. The single most important component of such a system is a core of highly educated and dedicated teachers. The success of any industrial policy will rest not only with the development of world-class universities but the fostering, maintenance and enrichment of the total educational system. The university, as the focal point for the training of teachers, has a practical role to play in this area. This reality well illustrates the crucial role of the university. Yes, it must be concerned with science and industrial strategy, but it cannot confine itself to those areas exclusively. It must be concerned with the totality of human experience.

The Alberta Institute of International Affairs

A theme running through the White Paper is the recognition that Alberta's future economic success is in part dependent upon the international environment and international trade. We agree with this assessment and recommend the establishment of an Alberta Institute of International Affairs. In addition to the offering of international business education, such an institute could provide advanced preparation in: foreign languages and cultures, particularly those of the Pacific Rim countries; foreign trade; foreign policy; and international law. Given the full range of activities and curriculum at the proposed institute, it should be located on the campus of the University of Alberta which has the necessary support services in terms of existing programs and library resources. Development of the Institute's programs should be done in full cooperation with the other Alberta universities, colleges and technical institutes.

Activities of the Institute would include:

- (a) Executive development and management training for the business community in international business and related areas.
- (b) Student/faculty and executive in-

terchange and internship programs through linkages with leading international organizations and universities.

- (c) Research in areas such as trade strategy, including GATT and non-tariff trade barriers; international commercial law; foreign policy; Canada-U.S. relations; export financing; and analysis of export markets.

- (d) Language training for teachers working in the Alberta school system. For example, this could be done through a series of exchanges where Albertans go overseas to learn foreign languages and international students come to Alberta to learn English as a second language.

- (e) Provision for (or arranging for) graduate education in selected areas such as petroleum engineering, transportation, communications, or pharmacy for Third World countries.

- (f) Recruitment through an international scholarship program of students from around the world.

To be effective, such an institute should be an integral part of the university community so that students and staff could participate in and benefit from the full range of programs, activities and services.

What Industries Should be Attracted?

Throughout the White Paper there are references to the fact that the province must be selective and imaginative in developing policies to attract industries. For example, "Our problems are more oriented to selecting strategies which will encourage some industries to locate here which will complement our existing strengths yet further diversify our economic base. The selection of these industries may be difficult and the initiatives needed to bring the development here imaginative" (p. 39).

"If we wish to capitalize on the initial strengths of our petrochemical industry or our telecommunications industry, against a world pursuing the same objectives, it may be necessary to consider quite new strategies to build upon these specific sectors" (p. 40).

In the case of high technology and research, "many observers believe that on a *specialized* basis Alberta has the potential for a fair share of winners" (p. 44).

The challenge is to identify the new

strategies and those areas where Alberta can be successful. We believe the universities can play an important part in the identification and development of these strategies and initiatives. We are prepared to work with the province and industry in doing so.

At the outset it is clear that we can and should develop our natural resource strengths, such as energy, agriculture and forestry. As well, we should maximize the opportunities flowing from our geographical position as gateway to the north. We should also recognize that our future economic well-being depends upon vigorous international trade.

Let me use agriculture as an example. Food processing and new product development provide the greatest promise for improving the economic impact of agriculture. Since the greatest share of the economic activity and employment opportunity occurs after the food and fibre leave the farm gate, a substantial increase in research and development in this area is necessary if we are to maintain reasonable prosperity.

Traditional research in agriculture should be complemented by biotechnology which has the potential for significant application to agriculture. The ultimate aim of these developments in basic research is to attract "high-tech" industry, to improve agricultural efficiency and to sustain and improve the marketability of Alberta produce. The initial stages are likely to be costly both in terms of finance and effort. These are expenditures, however, which we can ill-afford to avoid.

In the long-run, Alberta should aim to become a world centre for agricultural biotechnology; in particular, it should become *the* centre for developments relating to northern climates. The net advantages would be an inflow of research and development capital, an agricultural sector one step ahead of its competitors and the opportunity to export not only produce, but also technology. We have already taken a step in that direction by working with Canadian Pacific in the establishment of their project to promote the application of biotechnology to the problems of western agriculture.

Agriculture is a good example of building on our natural strengths, but a successful strategy must go beyond reliance on traditional areas and

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search out new ones where the Province can compete successfully. The key here may be to build on the existing strengths of the university. Careful examination should be given to activities already underway whether it be in lasers, biochemistry, radiopharmacy, or the Centre for Frontier Engineering Research.

For example, the creation of computer software is now a major industry. It is an exceptionally clean industry environmentally, one requiring minimal transportation, and a "high-tech" one in terms of equipment and human intellect. By combining it with a new academic program of major relevance to industry, we could establish something of conspicuous note in both academic and industrial terms. "Informatics" is now the generally-used word for automated processing of information. There are significant applications of software development in this area in hospitals and financial systems. Perhaps a new master's degree in this field is necessary just as a new program in computer-assisted cartography was developed.

The Importance of the Computer

The White Paper recognizes the need to provide computers in the school system. One of the university's key roles is to ensure that the teachers in the schools are fully and properly trained. But the role does not stop there. Other important activities include, for example:

- Co-op programs should be established with industry for both Computing Science and Computer Engineering undergraduates.
- A Computing Science industrial liaison committee should be established.
- Evening course offerings should be made available in order to upgrade and update graduates in industry.
- The establishment of an industry/Computing Science research institute to promote applications of computing technology in industry and to attract computer scientists with outstanding credentials from across the country.

The university has made a commitment to computing science and is anxious to continue to support significant program development. While the importance of computer literacy must be underlined, a word of caution is also necessary. Computer literacy should not detract from the far more im-

portant business of teaching the students to think, to read and understand, and to write clearly and precisely.

Changing Times For Universities in the Community

Two themes dominate university research. One is that in recent years there has been a noticeable shift towards research more related to the economy. The second is that the university community continues to believe that fundamental research is the strength of the university academy. The recent "Report of the Task Force on Federal Policies and Programs for Technology Development" said it this way:

"If university laboratories were ever 'ivory towers', they are emphatically less so today. Universities now play a central and strategic role in Canada's overall research effort. They tend to take the longer view: although most university research is fundamental, and is concerned with the earlier stages of the innovative chain, it is a crucial link in that chain. Fundamental research carries an additional benefit: it fosters the educational process itself. The social benefits of education—which produces ideas as well as highly-skilled people—plus the long-term benefits of scientific research, make university research extremely cost-effective."

There is a movement to a new high technology environment in the economy and an emphasis on innovation. The White Paper recognizes these as areas of priority. We agree with this thrust.

Many of the challenges and ideas in high technology find their roots in universities and start as fundamental research projects although there are clearly significant contributions from government laboratories and industrial research and development departments. In Canada and Alberta, universities are particularly significant. In terms of universities and our current research and industrial configuration, Dr. Stuart Smith, President of the Science Council of Canada, stated:

"There is the matter of how to make use of the research that's done in our universities, which are wary of commercialization. Canada has little alternative, however, but to find a unique

way to use these scientific research resources, despite the problems. We don't have enough industrial research, nor do we have the large companies from which new innovative ones might spin off as they do in the U.S. Our universities, whether they like it or not, may represent our biggest asset in this contest."

Understandably, universities have been traditionally wary of commercialization because they are committed to fundamental research. The areas of applied and developmental research, while frequently addressed on campus, are also found in government and industrial laboratories. This dichotomy raises the fundamental question of technology transfer: how can ideas be moved from universities to industry and government, and at what stage in their evolution should they be moved? As with so many other issues in Canada, a unique way is necessary. Again we offer to work with government and industry to find that solution. Later we will have a few suggestions to make in this regard.

in order for society to reap significant benefits. Therefore, encouragement of research and development is necessary but not sufficient—we must ensure that the adoption of new technology is not only encouraged but is, on balance, successful. While leadership in applied research and product innovation must rest with the private sector, governments can play an important role as catalysts in ensuring that Canada maintains the necessary capacity to engage in research, and to develop and adopt the new technologies which will be needed to maintain international competitiveness."

Many things can occur in the support of technology transfer:

- Existing companies can benefit from new technology.
- New companies can be set up in new product areas.
- Ideas from other geographic regions can find their way into local industry directly or through intermediaries.
- Various sequences and partners can become involved, including universities, government laboratories and businesses.

The challenge of technology transfer is presented in the White Paper in two ways. First, "There is a need for improved technology transfer both between the universities and industry, and the Alberta Research Council and industry" (p. 104). We agree and we also feel more can be done between the University of Alberta and the Alberta Research Council. Second, "A gap exists in development support between the concept/prototype stage of product development and the commercialization stage," (p. 102). We agree, and much of this gap is in applied and developmental research.

A variety of exciting technology transfer techniques are already in existence at the University of Alberta. Let me give a few examples selected from many. Traditional ways are through publication of scholarly research and the teaching of our students. These approaches continue. New situations include joint ventures (Chembiomed and Majestic); guest companies on campus (Summa); university-business liaison programs (Microelectronic Centre); and research centres (Centre for Frontier Engineering Research). The challenge is putting together the appropriate network of new organizations, structures, thrusts, and players, and to fit them into the innovation sequence.

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Some New Policies and Programs to Enhance Technology Transfer

Cooperative Research Support

We favor initiatives that would:

1. Establish linkages among, for example, the universities, Alberta Research Council, Coal Mining Research, Food Science Centre, Alberta Environmental Centre, granting agencies, economic development authorities, associations, companies and venture capitalists.
2. Expand contract research with industry and government at the university level.
3. Establish an Industrial Research Centre as a part of the university providing a focus for cooperative research and a vehicle to handle intellectual property at the university.
4. Set up a formal University Industrial Affiliates Program which would foster market-related research on campus and a forum for exchange of new ideas.
5. Encourage research on generic problems defined and administered through groups of companies in cooperation with each other.
6. Take effective account of international circumstances and Alberta's industrial base in agriculture, forestry, and energy.

Technology Transfer Mechanisms

We favor measures that would:

1. Encourage various programs with industry, including exchanges of personnel, equipment usage, seminars, publication and library sharing, some of which could be built into the industrial affiliates program, the Industrial Research Centre and current university mechanisms.
2. Formulate effective networks for support to graduate studies and jobs for graduates.
3. Strengthen library resources, a fundamental component to basic research in all areas.
4. Establish an international students and speakers program along the lines of the White Paper.
5. Develop the idea of an Alberta Innovation Centre for investors, licenses, patents and technology support.
6. Do more in patenting and licensing

generally with a close eye to marketability of new ideas.

7. Cooperate with research park authorities and incubator programs towards industrial formation. Alberta Economic Development can play a key role here.
8. Set quantifiable goals for movement of technology: for example, 50 projects in 5 years. A project would be defined as a discrete unit of activity and could be tied to a new company, expansion in an existing company or change in an industrial setting.
9. Support the Technology Development Authority. University research is conducted in an environment of freedom. However, there is a valuable sense of contribution when university researchers are aware of industrial needs and find linkages between the two fields of activity. More can be done to see this type of situation unfold. The Technology Development Authority could be modelled around a networking concept coordinating their policies and programs effectively in liaison with the university and other organizations.

Two New Foundations

I return to the proposal developed two years ago and presented then by the four universities in Alberta. If the government is serious about the paramount importance of science and technology to its economic future and about the need to provide a "critical mass" of highly qualified personnel in these fields, then the best way it can do what is necessary in order to realize this goal is to create two companion Foundations to the Alberta Heritage Foundation for Medical Research, one to support agricultural, natural science and engineering research (those fields that nationally relate to NSERC); the other to support the humanities, fine arts and social sciences (those fields that nationally relate to SSHRC). The AHFMR, which is well on the way to making Alberta an internationally-recognized centre of excellence in medical research, has been successful since most of its programs are designed to attract outstanding medical scientists to Alberta and to provide for the training of young medical scientists who one day will take their place in the forefront of health science. A similar program designed to bring outstanding leaders and promising young scientists in all fields: agriculture and art, ph-

sics and drama, chemistry and economics, molecular biology and anthropology, genetics and psychology, ecology and literature, and all of the engineering disciplines is urgently needed in this Province. We cannot stress too strongly the reality that true success in the sciences requires equal recognition of the humanities and social sciences. Scientific inquiry is not confined to one area of knowledge and experience. Knowledge and intellectual curiosity transcend disciplinary boundaries. It is our view that nothing would do more in the long run to further the economic well-being of the people of Alberta and the goal of the government to attract and develop industry in our Province. Like AHFMR, these foundations, while accountable to government, the Legislature and, therefore, to the people of Alberta, should be independent of government control.

Conclusion

The White Paper places a valuable perspective on research. There is no doubt that the questions and ideas discussed in the White Paper have important implications for universities in Alberta. We have attempted to outline some of our ideas and concerns in this brief response. As a publicly-funded institution we recognize that we have responsibilities in participating in the development of a science and indus-

trial policy. My colleagues and I believe that central to the effective development of these policies, strong and vigorous *independent* universities are essential. We are prepared to cooperate with the Province in the further development of these ideas.

If truly world-class universities are to be maintained, then appropriate funding and bold and imaginative mechanisms for cooperative action among universities, government and industry must accompany any new policy initiatives. The universities are a vital and important resource in the province and will continue to play their role in its development. □

New Fire Prevention Officer Appointed

Ray Richards, formerly with the Saskatchewan Fire Commissioner's Office, has been appointed to the position of Fire Prevention Officer. Mr. Richards replaced Sid Smith, who has retired after 17 years as University Fire Marshal.

Mr. Richards can be reached at 432-5614; his office is in the Department of Occupational Health and Safety area on the lower level (south end) of Education Car Park. □

President's Advisory Committee on Sexual Harassment (PACSH)

President Horowitz formed an advisory committee on sexual harassment (PACSH) in 1982. The committee operates in accord with the definitions of sexual harassment adopted by the Alberta Human Rights Commission and the Canadian Association of University Teachers. PACSH has jurisdiction over cases of sexual harassment involving members of the University community.

PACSH is composed of one woman and one man from each of the following University groups: undergraduate students, graduate students, non-academic staff, and academic staff. You can be put in contact with any PACSH member to talk about the committee, its procedures, how to handle a sexual harassment problem, or how to lodge a formal complaint by telephoning the administrative office at 432-TALK (432-8255).

The Senate

Annual Report 1983-84

The University of Alberta



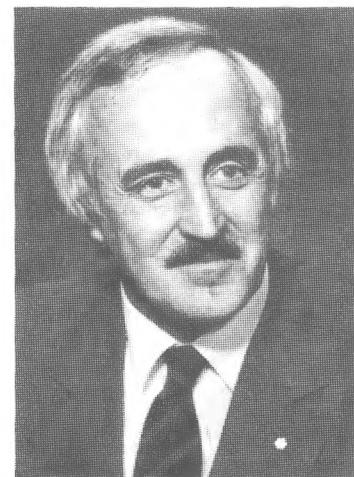
Following his very busy first year's schedule during the University of Alberta's 75th Anniversary, Chancellor Peter Savaryn continued to be active in this current year, beginning with functions connected with the World University Games. He visited special exhibits, was a spectator at most of the venues, and later in the year attended the presentation of the "Flame" to the campus. The Chancellor accepted many invitations from off campus organizations, such as the National Association of Canadians of Origin in India (where he was a luncheon speaker); the Alberta Association for Children with Learning Disabilities; CBC (to attend the première of "Chautauqua Girl"); the City of Edmonton's Variety Club International Luncheon; the opening of the Legislature, and the Jubilee Ball in Banff. He participated in the St. Stephen's College Convocation and the University Christmas Carol Service. He welcomed the delegates of the United Church of Canada to their meeting on campus, and was present when the City of Edmonton said farewell to the China Trade Mission.

Chancellor Savaryn attended the dedication of the Kurimoto Japanese Garden at the Devonian Botanic Garden; visited the University of British Columbia for the installation of the twelfth chancellor and attended our own Alumni Association Homecoming and Convocation Balls. He was pleased to meet Maureen Forrester, Chairman of the Canada Council, when she announced in Edmonton the Killam Award to Dr. Werner Israel; was present at the reception at which the formation of C-FER (the Centre for Frontier Engineering Research) was announced; participated in the conference "Canada, the World and the Future;" and attended other important lectures on campus.

In addition to presiding over Convocation, as an ex officio member of the Board of Governors and member of the Executive and Educational affairs Committees, the Chancellor has been closely concerned with many important decisions on the campus this past year, and has participated actively in all the functions of the Board. In addition, he met with the executive committees of the Academic and Non-Academic Staff Associations, the Students' Union, the Graduate Students' Association, as well as with many Deans. He continued to serve on the executive committee of the Friends of the

University and on the Students' Gold Medal Award Committee.

As Chairman of Senate, the Chancellor chairs the four full day meetings and is an ex officio member of all the standing committees. One of his aims is to allow an opportunity for Senate members to express opinions on matters of interest in post-secondary education, and to ask questions on particular items. At the same time, he tries to remind Senate members of the difference in role between the Senate, Board of Governors and the General Faculties Council. In short, he performs the legislated duty of a Chancellor "to represent the public interest in the University." He has continued to meet with the Chancellors of the Universities of Calgary and Lethbridge, and the Chairman of the Governing Council of Athabasca University. These are useful occasions for the exchange of information and opinion on matters of common interest. One member of each Executive Committee also attends these meetings.



Gilles Cloutier

Convocations

This year Fall Convocation (19 November 1983) was held in the Universiade Pavilion. There were many innovations at the Convocation. The University Chorus was able to participate in the ceremony; the Convocation Tea was held in the Pavilion, and diplomas were also distributed there. There was no limitation on the number of guests the graduands could invite, and there was plenty of opportunity for the taking of photographs. However, after serious consideration by the Convocation Committee, it was



Bruce Rankin

whose family donated the University Mace. Dr. Bob Crawford, Chairman of the Department of Chemistry, was the after-dinner speaker and his reminiscences were very well received. Afterwards, we had an opportunity to talk informally to our guests. The following day, we held our regular Senate meeting and received several briefs. One of the most important was from a school board superintendent who expressed real concern about changes in the admission requirements at the University of Alberta. Another from Red Deer College spoke of the importance of continued college-university liaison, and asked for university support in the college's aims to offer more transfer credit courses. President Horowitz and Associate



William Epstein

Vice-President (Academic) Zelmer were able to reassure those presenting the briefs how important the University felt it was to keep in close communication with high schools and colleges across the province. They appreciated the fact that these concerns had been raised.

The Senate participated actively in National Universities Week, with members leading campus tours; speaking to community groups; visiting schools in their own districts and attending a lecture by Judge Raynell Andreychuk, former Chancellor of the University of Regina. This event was co-sponsored by the Academic Staff Association.

Over the year, Senate spent a considerable amount of time discussing the possibility of creating a community service award for members of the faculty. After consultation with interested bodies across the campus, it was

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Marion Shipley

decided at this time not to proceed with that suggestion.

Senate received presentations from the Faculties of Physical Education and Recreation Administration, Rehabilitation Medicine, and the Faculté Saint-Jean. In addition, Mr. A. Hollender, Fund Development Director, and Mrs. B. Hjartarson, Co-ordinator of University Orientation Days, shared information on the progress of their projects. Senate members value these opportunities to learn more about different University programs.

One item which received particular attention from Senate, as from many other bodies on campus, was the impact of overcrowding at the University of Alberta on the quality of teaching. Five members of the faculty described to members of Senate the detailed effects of the larger classes and other restrictions placed on the University because of constraints of funding. Another item was the question of mainte-



Justice Wm. Sinclair

nance grants for mature students, when members of the Students Finance Board were invited to attend a meeting to discuss possible future changes to the regulations regarding full-time students. This was a most interesting agenda item. Several mature students were able to share experiences and some of their difficulties. In addition, Senate listened to concerns raised by the Students Finance Board. It was certainly apropos, following the Senate's Task Force Report on Mature Students. (Copies of this—and all other Senate Task Force Reports—are freely available from the Senate office.)



Bill Stewart

At the February Senate meeting the President announced, with great regret, that for the first time the University of Alberta would be curtailing enrolments for September 1984. Details of the policy are now well known, and the number of incoming students is to be kept at the 1982 level. What is not yet known, of course, is the effect this will have, and how many students in Alberta will be unable to attend a university or college. The President emphasized that all post-secondary institutions were experiencing the same kinds of pressures. It was with sadness that he had to announce these restrictions.

The Senate also supported a proposal from the Students' Union regarding the remission of student loans. In this they were following the Board of Governors, which had previously discussed the proposal and agreed with its recommendations. One of the items included in this was a system of annual remission. The first year in which a loan is taken out would be



Jules Van Brabant

counted as the year for the most remission, instead of the first year of studies. The Students' Union felt this would be beneficial not only to students but also to the provincial government, as it would be easier to verify information and would save money. The Chancellor wrote to the Minister expressing Senate's support.

In November, the Senate Lay Observers Report was presented and once again the Senate members who had attended admissions meetings of quota programs indicated how much they had learned about the difficulties of administering the system of admissions where enrolment is restricted. It is five years since General Faculties Council originally asked that Senate lay members observe the admissions process in quota programs, and to forward a report to the GFC Committee on Admissions and Transfer. There has been close liaison between the Senate and GFC on this subject, and GFC has been pleased to learn that the Senate feels the guidelines for admission are followed.

During the past year the Senate, as with all other departments on campus, had to make cuts in its budget, but the Chancellor was pleased to announce that we finished the financial year with a modest surplus.

Task Force Activity

During the past year an ad hoc committee, under the chairmanship of the Reverend Tom Leadbeater, prepared a report which recommended that Senate set up a task force to look into the role of the University in the teaching of ethics. This task force began work in January of this year and cur-

rently is engaged in assessing much of the information it has gathered through faculty questionnaires, through student questionnaires (one pilot study, to be followed in the fall by a more comprehensive one), and letters solicited from professional associations and other interested groups. The presentation by the ad hoc committee included a panel of four people—a member of the Department of Philosophy, a member of the Faculty of Education, a student and a judge—who spoke of their own ideas as to what the role of the University might be. Mrs. Fraser, who is chairing the task force, says that the final report will be presented to Senate in April of this year.



John Weaver

An ad hoc committee was also set up under the chairmanship of Dean Jones to discover what progress had been made since the presentation of the Senate's report on Second Languages in 1981. It was generally felt that there was marked improvement in facilities for the teaching and learning of French, although it was more difficult to assess what was happening in the way of demand from and resources for the teaching and learning of other languages.

Senate members have had an opportunity to deliberate on many and varied issues in post-secondary education. The active participation by Senators has been appreciated, and has given substance to the discussions.

Standing Committees

Executive Committee

The Executive Committee met six times during the past year and con-

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Hugh Horner

tinued to supervise the budget of the Senate and the preparation of the agenda for Senate meetings. The committee supported the Chancellor in his many activities, including having a member attend the meetings of Chancellors in Calgary. The Executive Committee dealt with matters arising between meetings of Senate, and continued to ensure that all its actions were ratified at plenary sessions of Senate. The Executive Committee decided this year, as a result of the surplus in the budget, to participate in a combined meeting of Senate Executive Committees with the Minister of Advanced Education, if such could be arranged.

Honorary Degrees Committee

The Honorary Degrees Committee continues to select as recipients of honorary degrees those people who will bring honor to the University by



Saretta Sparling

their acceptance. Members of the committee feel that they are fortunate to have nominations of such high calibre as those which are received largely as a result of newspaper advertising on and off campus.

Nominating Committee

Each member of the Nominating Committee tries to become familiar with the talents of current Senate members, so that when consideration is given to appointments to committees, the most qualified person can be asked to serve. The Nominating Committee, too, feels fortunate in having so many highly qualified people who allow their names to stand for election to the Senate.

Emil Skarin Fund

The monies accruing from the bequest to the University from Mrs. Ada Skarin were presented this year to R. Currah, Devonian Botanic Garden, (towards the costs of preparing a leaflet on Alberta Wildflowers); and E. Mardon (to help offset the expenses he is incurring in preparing his book *The Men Who Made Alberta*).

Farewells

This year we said farewell to the following members of Senate: G. Baldwin, P. Czartoryski, H. Flewwelling, W. Graves, M. Hardwicke-Brown, P. Hunt, W. Kurney, P. Lemay, M. Lobay, L. Mogge, R. Steinhauer, S. Sunley, B. Thomas, M. Trussler, E. Wachowich and A. Watts. We thank them for the tremendous contribution they have made during their term on Senate.

We also thank V. Lubbers, Secretary in the Senate office, who resigned in May.

New Members

We are pleased to welcome the following new Senate members for 1984-85: P. Alpern, J. Dale, P. de Groot, J. Ferguson, B. Krull, J. MacPhail, P. Meekison, J. Oshry, S. Parkash, M. Payne, S. Pemberton, B. Richardson, W. Sawatzky, B. Strehlke, R. Tinkess and E. Zawadiuk. We hope they will very soon feel part of the University of Alberta Senate. We know they will carry on the tradition of service which



Randy Currah (left) was a recipient of a Skarin Fund grant...



...as was E. Mardon.

others have set over the past several years.

Senate Membership List 1983-84

Ex Officio

Mr. P. Savaryn (Chancellor)
Dr. M. Horowitz (President)
Dr. R.G. Baldwin (Vice-President,
Academic)

Dr. P.M. Miller (Dean of Students)
Prof. C.M. Lockwood (Dean of Extension)

Mr. E.R. Wachowich (President,
Alumni Association)
Mr. R.H. Heyworth (Vice-President,
Alumni Association)

Appointed Members

Deans' Council

Continued on page nine

Dean F.D. Jones
Dean W.J. Kurmey

Board of Governors

Mrs. J.E. Bentley
Dr. J.R. Kandler

General Faculties Council

Prof. R.R. Faryon
Prof. B.L. Harris
Prof. J.A. Kernahan

Alumni Association

Mrs. H. Flewwelling (Red Deer)
Mr. P. Lemay (Grande Prairie)

Students' Union

Mr. M. Hardwicke-Brown
Mr. S. Sunley
Mr. B. Thomas
Mr. A. Watts

Graduate Students' Association

Mr. L. Mogge

*Minister of Advanced Education
(non-academic staff member)*

To be appointed

*Minister of Advanced Education
(Public Members)*

Mrs. E. Bereti
Mr. G.G. Campbell
Dr. H. Danial
Mr. G. Desaulniers (St. Paul)
Mrs. T. Haberman (Grande Prairie)
Mrs. B. Kerr
Mr. J.E. McLean
Dr. J. Scott
Mr. L. Soper

Elected Members

Mr. R. Basken
Mr. R. Berger
Mr. C.O. Brager (Camrose)
Mrs. B. Bromley (Yellowknife)
Mrs. M. Brown
Mr. P. Czartoryski
Mrs. J. Fraser
Mr. W. Graves
Mr. H.C. Hulleman (Red Deer)
Mr. P.C. Hunt (Fort McMurray)
Father W. Irwin
Mr. R. Killeen
Rev. T. Leadbeater
Miss M. Lee
Mrs. M. Lobay
Mr. D.R.B. McArthur
Dr. S.G. McCurdy
Mr. C. McDonald
Mr. Justice T. Miller
Mrs. M. Pasula (Drayton Valley)
Mr. J. Pratt (Sherwood Park)
Rev. B.B.F. Scheske



Ssshhh! Men and women at work.

Senate Staff

Mrs. R.M. Totman (Executive Officer)
Mrs. J. Goldsand (Assistant to Executive Officer)
Mrs. V. Lubbers (Secretary)

Committee Memberships

Standing Committees

Executive

Mr. Savaryn (Chairman)
Dr. Horowitz (ex officio)
Mrs. Bentley
Mrs. Lobay
Mr. McLean
Mr. Mogge
Mr. Pratt
Mrs. Sprague
Mr. Watts

Nominating

Mrs. Sprague (Chairman)
Mr. Savaryn (ex officio)
Mrs. Brown
Prof. Kurmey
Dr. McCurdy
Mr. Justice Miller
Mr. Sunley
Mr. Wachowich

Honorary Degrees

Mr. Savaryn (Chairman)
Dr. Horowitz (ex officio)
Mr. Berger
Mr. Desaulniers
Prof. Faryon
Mrs. Fraser
Mrs. Haberman
Prof. Kernahan
Miss Lee
Mrs. Pasula
Mr. Slemko
Mr. Small
Mr. Thomas
Mr. Walsh

Emil Skarin Fund

Mr. Brager (Chairman)
Mr. Savaryn (ex officio)
Dean of Arts (ex officio)
Dr. Clarke (ex officio)
Mrs. Bereti

Mr. Hardwicke-Brown
Mr. Lemay
Rev. Scheske

Ad Hoc Committees

*To consider Senate involvement
in National Universities Week*

Mrs. Lobay (Chairman)
Mr. Brager
Mrs. Brown
Mrs. Clarke (Community Relations)
Prof. Lockwood
Mr. Small

*To review progress on the
Second Languages Task Force*

Dean Jones (Chairman)
Mrs. Kerr
Mrs. Lobay
Rev. Scheske

To plan out-of-town meeting

Mrs. Bentley
Mr. Heyworth
Dean Lockwood
Mr. Soper

*To consider establishing a
Task Force on Ethics*

Rev. Leadbeater (Chairman)
Continued on page ten

Mr. Czartoryski
Mrs. Flewwelling
Mrs. Fraser
Mr. Hardwicke-Brown

Other Senate Appointments

*Senate Appointee to
Board of Governors*
Mr. McArthur
*Senate Observer to GFC
Academic Development Committee*
Mr. Graves

Faculty of Extension Council

Mrs. Haberman
Mr. Hunt
Mr. Killeen
Mrs. Pasula
Mr. Strain

*Lay Observers of the Admissions
Process in Quota Programs
(1984 Admissions)*

Business: Mrs. Kerr
Computing Science: Mr. Small
Criminology: Father Irwin
Dentistry and Dental Hygiene:
 Mrs. Bromley
Drama: Mr. Heyworth
Engineering: Miss Trussler
Law: Mr. McDonald
Library Science: Mr. Soper
Medical Laboratory Science:
 Mr. Basken
Medicine: Mrs. Sprague
Nursing: Mrs. Bentley
Pharmacy: Mrs. Brown
Occupational Therapy: Dr. Kandler

Physical Therapy: Dr. Wojcicki
Speech Therapy: Mr. Slemko
*Minister of Advanced Education
Steering Committee for the
Post-Secondary Participation Pattern
Study*

Rev. Leadbeater
*Health Sciences Animal Policy
Committee of the
Faculty of Medicine*
Mrs. Lobay
Mr. Small

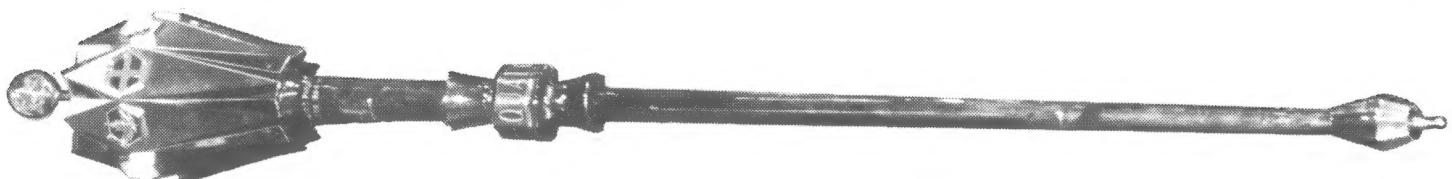
Task Force on Ethics

Terms of Reference

To raise the level of awareness within the University of Alberta about ethical considerations, as these relate to the teaching, research, community service and other activities of the University; to seek opinions, observations, expectations as to the role of the University of Alberta in the development of ethical standards in students; to make appropriate recommendations.

Membership

Mrs. Fraser (Chairman)
Rev. Leadbeater (Vice-Chairman)
Mr. Hardwicke-Brown
Father Irwin
Miss Lee
Mr. Lemay
Mr. Justice Miller
Dean Miller
Dr. Wojcicki



General Faculties Council

A meeting of GFC took place on 24 September. The question period produced the following query from H.B. Dunford, Department of Chemistry: "Is it correct that an undergraduate student who has passed a University of Alberta Department of English course must still pass the Writing Competency Test? If so, what is the logic behind this rule?" In a written reply, L.E. McCallum, Chairman, Testing and Remediation, pointed out that University regulations require that all students first entering an undergraduate program at this University must pass the Alberta Universities' Writing Competency Test.

"There are bound to be a few cases in which students have passed an English course and have not passed the Writing Competency Test, because the situations are quite different. In an English course, students are being evaluated for their knowledge of English literature, and most of their assignments are written out of class rather than in a test situation."

Vice-President (Academic) Meekison is reviewing the matter.

New Members

Council received the names of G. Redmond, Recreation and Leisure Studies; R. Sydie, Sociology; and N. Hurlbut, Family Studies. Each is a faculty member who has been elected to sit on GFC from 24 September 1984 to 30 June 1987.

The following persons were appointed to GFC for terms of office which begin immediately and which expire as indicated: D. Richards, President, AAS:UA (30 June 1985); J. Shinkaruk, student member of the Board of Governors (30 June 1985); K. Edey, Physical Education and Recreation (31 March 1985); B. Takeda, Agriculture and Forestry (31 March 1985); and K. Kopola-Ghostkeeper, NASA (30 June 1987).

Other Business

In a report on the monitoring of the quantity and quality and use of student study space, it was noted that use of such space has increased over the past year to a "high and commendable level." When the asbestos removal

program in Cameron Library is completed this year, the quality of the student study space environment will return to better than normal, according to John Williamson, Director of Facilities Planning.

The Library Committee's Annual Report 1983-84 stated that, throughout the year, "the overwhelming concern of the committee was to achieve an equitable distribution of limited funds for acquisitions, as well as the need to adjust priorities so that increasing demand for service could

be met with no real increase in resources."

Funding for periodicals bumped along once again—only \$10,000 could be allocated for new subscriptions. The committee also reported that "the increased costs for renewal for standing subscriptions continued to require selective cancellation of less important periodicals in order to maintain the more vital."

The Library, the report stated, has received clear indications that it must protect itself (and the University)

against legal attack for permitting the duplication of copyrighted material. A policy is being worked out.

In the opinion of the committee, the Library must acquire more space in short order. The committee feels that an addition to Rutherford North should be constructed in accordance with plans to be considered by the appropriate University committees in due course.

Following the meeting, the President hosted an informal reception at University House. □

Purdue Professor is Boomer Lecturer

The Department of Chemistry invites members of the University community to attend the 27th annual Edward Herbert Boomer Memorial Lectures, to be given by R. Graham Cooks of Purdue University, Indiana. The Boomer Lecture Series commemorates the contributions of the late Edward H. Boomer, Chairman of the Chemistry Department from 1925 to 1945.

Professor Cooks is a mass spectroscopist and analytical chemist whose research interests cover instrument development, fundamentals and practical applications of mass spectrometers. He was involved in pioneering the mass spectrometry/mass spectrometry method of trace organic analysis. Several new mass spectrometers have been built in his laboratory, and his research interests extend to surface analysis, ionic scattering, and energy disposal in chemical reactions. The focus of the work of his laboratories on surface analysis is the identification of organic and organo-metallic molecules in complex materials using ion and laser beam methods.

Professor Cooks was born in South Africa and educated at Cambridge, U.K., and Kansas State University. His studies have covered natural products in organic chemistry, mechanistic organic chemistry, the physical basis of mass spectrometry, and kilovolt energy/molecule interactions. He has been an Elsie Ballot Scholar at Cambridge and a Fulbright Senior Fellow at Warwick.

He is President of the American So-

cietry for Mass Spectrometry and the recipient of the Cancer Research Award and the Instrumentation Award of the American Chemical Society Analytical Division.

The Boomer Lecture Series will begin Monday, 15 October, at 8 p.m. Professor Cooks will speak on "Mass Spectrometry and Pre-Raphaelite Art" (creativity and personality in science and in art). On 16 October at 4 p.m., he will give a lecture entitled

"Structure, Energetics and Kinetics in Mass Spectrometry" (physical organic chemistry in the mass spectrometer). At 11 a.m. the following day, he will lecture on "Three Cheers for Instrumentation" (devices drive chemistry, not *vice versa*). The series will close on 18 October at 4 p.m. with "Taking Mass Spectrometry to the Masses: Biological, Fuels and Surface Analysis." All lectures will take place in the Chemistry Centre. □

Monica Hughes: Writer-in-Residence

The Department of English is pleased to welcome Monica Hughes as Writer-in-Residence for 1984-85. Mrs. Hughes is the author of 15 books for young people, including the Isis Trilogy and the award-winning *Hunter in the Dark* (1982). She will present a public reading on 11 October at 12:30 p.m. in L-3 Humanities Building. The reading is part of the Salter Reading Series.

Born in Liverpool, England, Mrs. Hughes was educated in England and Scotland, and immigrated to Canada in 1952. Since 1979, she has been speaking to university and professional groups in B.C., Alberta, Saskatchewan and Ontario on children's literature and her own writing. She has also taught aspects of novel writing at a number of Alberta workshops, and in schools and libraries in Ontario and B.C.

Some of her published works include *Crisis on Conshelf Ten* (1975), *The Ghost Dance Caper* (1978), *The Keeper of the Isis Light* (1980) and *Space Trap* (1983). She is the recipient of many awards, including the Alberta Culture Juvenile Award (1981), the Canada Council Children's Literature Prize (1982, 1983), and the Writers Guild of Alberta R. Ross Annett Award (1983).

Mrs. Hughes's term as Writer-in-Residence began last month and extends to May 1985. She will be pleased to speak with people from on campus and off. Her office is 3-42 Humanities Centre (432-2437). She can be reached Wednesdays and Thursdays between 1 and 4 p.m. Readings and interviews can be arranged by calling her home number, 455-5602. □

The Senate Visits Grande Prairie

The annual out-of-town Senate meeting was held two weeks ago in Grande Prairie. These meetings are held each September in northern Albertan communities to allow the Senate and senior University officials an opportunity to hear local concerns as they relate to University education and our institution in particular. In the past, the Senate has visited Edson, Hinton, and Jasper; Vegreville, Lloydminster and neighboring communities; Red Deer; and Fort McMurray. Residents in these communities have been very appreciative of the University's practical demonstration of interest in local matters and have made the most of their opportunity to be heard by a body whose recommendations are so influential. This year was no exception.

The Morning

After arriving in Grande Prairie, the Senate and other members of the entourage were treated to a tour of Grande Prairie Regional College (Dorothy Rowles, President) before settling down to a regular business meeting at the Grande Prairie Inn.

Business opened with a report from Chancellor Savaryn on his meetings with community groups and organizations over the last few months. The President then gave his report which detailed, among other things, the enrolment increase experienced this fall. While first-year enrolment has levelled off to some degree, second and senior year registrations continue to reach new heights. "Weekly Student Contact" hours—a meaningful expression of an instructor's workload—are up 15 percent in Arts, Agriculture and the Faculté Saint-Jean, with similar increases in other Faculties providing service courses. The President suggested, in light of such increases, that progression standards, from one year to the next, may have to be reviewed but, as ever, the primary criterion should be academic excellence.

Dr. Horowitz's opinions were also sought on *The Great Brain Robbery* by Professors Bercuson, Bothwell and Granatstein (McClelland and Stewart: Toronto 1984)—available in the Bookstore at \$12.95). The President

commented on the "overly romanticized" notion of academic life in the '50s, when university education was by and large restricted to an advantaged élite. For him, a return to such restrictive days would disallow opportunity and would certainly be retrogressive.

During this portion of the Senate's visit to Grande Prairie, the names of the next recipients of honorary degrees were announced—Nathan Keyfitz, a Montreal-born demographer, and Ruth McClure, former Dean of Nursing here. Senator Tom Leadbetter also reported on a recently completed study of participation patterns of Alberta post-secondary students. To oversimplify the results: those most likely to attend a post-secondary institution in Alberta in 1981 were urban women of Ukrainian heritage, aged 18 to 21 years with a "high" socioeconomic level and all that that implies. Almost predictably, those least likely to attend were rural Native men with a "low" socioeconomic background.

After lunch, Senate members were able to visit one of three facilities in Grande Prairie: the recently opened Queen Elizabeth II Hospital; the Crystal Park School, where innovative pedagogical techniques re-integrate handicapped children into a normal school environment; and the Grande Prairie Composite High School. A fourth group of Senators returned to Grande Prairie Regional College to have informal chats with faculty members. Senate members were able also to view an instructive display on the history and achievements of the Faculté Saint-Jean.

The Afternoon

As is the custom at out-of-town meetings, the afternoon was devoted to the hearing of briefs from local individuals, groups, and associations. The main thrust of the briefs presented was the strongly perceived need for Grande Prairie Regional College to be allowed some form of degree-granting status at the undergraduate level. Such was the tenor of briefs presented by Chairman Backus of GPRC's Board of Governors; Myrna Barber, the Business and Professional

Women's Club; His Worship Mayor Oscar Blais; City Commissioner Dennis Pommen; Gordon Piercy, Grande Prairie Economic Development Commission; Bernard Derosiers, National Democratic Party; Mary Wild, Vice-Chairman of the Catholic School District; and Paul Lemay, GPRC faculty member and former Senator, who also spoke to the need for maintaining institutional autonomy.

Other briefs were an urgent plea for help from Derek Taylor, Superintendent of the Grande Prairie Public School District, and a statement on "the Importance of a General Course in Ethics in an Undergraduate Program," presented on behalf of the local ministerial association by Pastor Heinbuch.

Mr. Taylor's request for assistance was made in relation to the needs of exceptionally gifted children. His school district has the wherewithal to send such children to programs of limited duration elsewhere but does not have the intellectual resources in Grande Prairie to meet their needs. (It should be noted that Mr. Taylor was realistic in his assessment of what is meant by the term "exceptionally gifted": in a city the size of Grande Prairie—c. 26,000 cap.—there may be only two such children at the most.)

Pastor Heinbuch spoke to his Association's perceived need for a mandatory ethics course in our undergraduate programs. Such a course, it was asserted, could help people in the process of practical decision making and could be taught in many ways, as a course in the "History of Ethics" or as "Foundations of Christian and non-Christian Ethics." Senate members, noting that a task force is already engaged in studying whether or not there is need for formal instruction in ethics, nevertheless hesitated to agree that such a course should be mandatory.

After the close of the meeting, there was a reception hosted by the City of Grande Prairie which was followed by a banquet hosted by the Grande Prairie Regional College, with wine supplied courtesy of Canadian Hunter. The after dinner speaker was cosmologist Werner Israel, winner of the 1983 Killam Prize and member of our Department of Physics. Introduced by colleague and Senate member Tony

Kernahan, Dr. Israel spent 20 minutes discussing the first 1.76 seconds of Existence. Following dinner, the Senate boarded the chartered North Cariboo Convair and returned to Edmonton.

New Members

The following people are new members of the University of Alberta Senate: Paul Alpern, Janet Dale, Pieter de Groot, June Ferguson, Burt Krull, Jannetta MacPhail, Peter Meekison, Jean Oshry, Sat Parkash, Maureen Payne, Shah Pemberton, B. Richardson, Wes Sawatzky, Burk Strehlke, Bob Tinkess, and Edith Zawadiuk. □

Everything You Wanted to Know About Cholesterol

*Jack Sprat could eat no fat, his wife could eat no lean
So her downfall was cholesterol, while his was a ruptured spleen.*

An AHFMR-sponsored visitor to the Department of Food Science, Paul Addis from the University of Minnesota, may not have all of the answers, but his seminar (11 October, 11 a.m., 711 General Services Building) promises to give some new insight into the much debated topic of cholesterol.

Dr. Addis's recent research data suggest that it may not be the dietary cholesterol but rather its oxidation products that should be watched carefully. Since the main interests of Dr. Addis are the chemistry and technology of red meats and poultry, his visit affords a unique opportunity for interdisciplinary discussions of the controversial cholesterol level.

The title of the seminar is "Potential Effects of Dietary Cholesterol and its Oxidation Products in the Coronary Disease." In addition to this event, Dr. Addis will be available for technical discussions with staff and students of the Department of Food Science and other interested parties on 10 October.

Telephone P. Jelen, 432-2480, for additional information or to schedule an appropriate discussion time. □

Greg Kealey: EFF Distinguished Visitor

The Arts Faculty welcomes Greg Kealey, Professor of History at Memorial University of Newfoundland in St. John's, for a one-month stay. Professor Kealey's visit (24 September to 24 October) has been jointly sponsored by the Departments of History and Sociology and the Canadian Studies Program, and is funded by the Endowment Fund for the Future.

Professor Kealey's recent election to the Royal Historical Society of London comes in recognition of his energetic leadership and accomplishment in the field of labour and working-

class history. He is the author of *Toronto Workers Respond to Industrial Capitalism, 1867-1892* (1980), which won the John A. Macdonald Prize from the Canadian Historical Association for the year's best book in Canadian history. With Bryan Palmer, he has also written *Dreaming of What Might Be: The Knights of Labour in Ontario* (1982), as well as more than 20 scholarly articles and a wide variety of other writing. He is the founding editor of a leading scholarly journal, *Labour/Le Travail*, and has co-edited a five-volume series of

readings for university Canadian history courses.

While in Edmonton, Professor Kealey will visit classes in History and Canadian Studies, and will conduct two workshops in Sociology. On 16 October at 3:30 p.m. in Tory B-38, he will give a lecture on "The Canadian Working Class: Past, Present, and Future," to which all interested persons are cordially invited.

For further information about Professor Kealey's visit, telephone Canadian Studies at 432-5086. □

service information

All information to be included in this column must reach the Office of Community Relations by 9 a.m. the Thursday prior to publication.

Coming Events

Lectures and Seminars

Mathematics

4 October, 4 p.m. Gerard Debreu, Professor of Economics and Mathematics, University of California at Berkeley, "The Core of an Economy." 657 CAB.

Arts

4 October, 4 p.m. R. Bosley, "Are characters universal?" 5-20 Humanities Centre.

Medicine

5 October, 1 p.m. H.R. Schelbert, Department of Radiological Sciences, UCLA, School of Nuclear Medicine, "Cardiac Applications of Positron Emission Tomography." 2-115 Clinical Sciences Building.

10 October, 8 a.m. K. Teo and C. Kappagoda, Division of Cardiology, "Heart Rate Response to Exercise After Subendocardial Infarction." 6-103 Clinical Sciences Building.

Romance Languages, Philosophy and English

9 October, 3:30 p.m. Jean-Claude Margolin, France, Centre D'Etudes Supérieures de la Renaissance, "Descartes and Humanism" (in English). 4-29 Humanities Centre.

10 October, 4 p.m. Jean-Claude Margolin, "Le Rire de Rabelais" (in French). 17 Arts Building

Forestry

10 October, noon. Paul A. Addison, Northern Forest Research Centre, "Ecological Effects of Elemental Sulfur on Forest Systems." 3-1 Mechanical Engineering Building.

Botany

10 October, 4 p.m. David Blundon, "Choosing Between Metal-Tolerant *Deschampsia caespitosa* (L.) Beauv. and Agronomic Grasses in the Revegetation of Toxic, Metalliferous Tailings in the Yukon Territory." M-137 Biological Sciences Building.

Food Science

11 October, 11 a.m. Paul Addis, University of Minnesota, "Potential Effects of Dietary Cholesterol and its Oxidation Products in the Coronary Disease." 711 General Services Building.

Limnology and Fisheries Discussion Group

11 October, noon. Dale Vitt, "Water Chemistry, Vegetation, and Landscape Gradients in Northern Alberta." G-217 Biological Sciences Building.

MacEachran Lectures to be Delivered by George Collier

George Collier, Department of Psychology, Rutgers University, New Brunswick, New Jersey, has been invited to present the 10th Annual MacEachran Memorial Lecture Series. The series was initiated in 1975 by the Department of Psychology as a tribute to the late J. MacEachran, the first Chairman of the Department and a major force in the early development of this University and of mental health programs in the Province of Alberta.

Professor Collier will lecture on 15, 16, and 17 October at 7:30 p.m. in G-116 Biological Sciences Building. The general topic is "Learning and Motivation: Function and Mechanism."

Professor Collier is an internationally renowned expert on motivation and regulatory systems. He can be identified with the branch of psychology known as behavioral ecology; the central tenet of this sub-discipline is that activities and neural mechanisms for feeding and obtaining water are inextricably linked to the organism's environmental niche. His research perspective is quite broad, encompassing studies of reinforcement, deprivation, thirst and diet, activity levels, and the comparative analysis of lifestyles such as those of carnivores and omnivores.

Although behavioral ecologists are usually characterized as field observers, Professor Collier has specialized in the study of choices by animals housed in well-controlled environments as typically used for brief experiments by comparative psychologists. In Professor Collier's work, an animal may live in a laboratory, but have access to a variety of patches affording activity, food, exploration, or nesting. The controlled simulation of environmental contingencies and the automatized recording of free choices allow for precision in theories of the determinants of lifestyles. For example, it is possible to manipulate the cost-benefit tradeoffs of nocturnal feeding, meal size, hunting and hoarding behaviors, and diet selection. Such experiments have direct implications for economic analyses of optimal foraging and self-regulation of behavior, important contemporary topics in evolutionary biology.

The laboratory-comparative approach has application to the study of nutrition and feeding disorders. Professor Collier and his collaborators have investigated determinants of sucrose consumption, body weight loss, water balance, protein selection, cold-weather diet, and food selection during pregnancy and lactation. His early work on the association between

the energy content of the diet and organismic activity levels has recently shown to be an important clue to the etiology of anorexia nervosa. His applied work represents a practical link between physiology and behavioral analysis. □

Attention American Voters

Americans in Canada can easily participate in the U.S. presidential elections on 6 November. David McKinney, Chairman of Americans in Canada, advises U.S. citizens in Canada to write their district consular offices immediately for voting information. Two items are required: a "Post Card Registration and Absentee Ballot Request" form and the voting instructions of the state in which they last resided.

Letters should be sent to the nearest U.S. district consular office. These offices are located in Toronto, Ottawa, Vancouver, Montreal, Quebec City, Calgary, Halifax and Winnipeg.

Americans in Canada is based at the University of Guelph. □

Salter Reading Series

11 October, 12:30 p.m. Monica Hughes, Writer-in-Residence, will read from her works. L-3 Humanities Centre.

Guild for Mediaeval and Renaissance Studies

11 October, 3:30 p.m. R.N. Bosley, "The Doctrine of the Mean in Western Thought and Literature." L-2 Humanities Centre.

Canadian Studies

11 October, 8 p.m. Jill Vickers, Carleton University, "Women in Politics/Women's Politics." 4-5 Tory Building.

History

15 October, 3:05 p.m. Sandra Myres, University of Texas, Arlington, "Victoria's Daughters: Nineteenth Century English-Speaking Women on the World Frontiers" (Canada, USA, Australia, New Zealand). 2-09 Business Building.

Psychology

15 to 17 October, 7:30 p.m. The 10th Annual MacEachran Memorial Lecture Series with George Collier, Department of Psychology, Rutgers University, New Brunswick, New Jersey, speaking on the general topic, "Learning and Motivation: Function and Mechanism." G-116 Biological Sciences Building.

Edward Herbert Boomer Memorial Lectures

15 October, 8 p.m. Graham Cooks, Purdue University, "Mass Spectrometry and Pre-Raphaelite Art." E-160 Chemistry Building.

16 October, 4 p.m. Dr. Cooks, "Structure, Energistics and Kinetics in Mass Spectrometry." V-107 V-Wing.

17 October, 11 a.m. Dr. Cooks, "Three Cheers for Instrumentation." V-107 V-Wing.

18 October, 4 p.m. Graham Cooks, "Taking Mass Spectrometry to the Masses: Biological, Fuels and Surface Analysis." V-107 V-Wing.

History, Sociology and Canadian Studies

16 October, 3:30 p.m. Greg Kealey, Memorial University, "The Canadian Working Class." B-38 Tory Building.

Slavic and East European Studies

16 October, 3:30 p.m. Max E. Mote, "Operative Principles of Soviet Power." 338 Athabasca Hall.

Boreal Circle

16 October, 8 p.m. Elspeth Young, North Australia Research Unit, Australian National University, "Retail Stores in Northern Native Communities: Australian and Canadian Perspectives." CW-422 Biological Sciences Building.

Secondary Education

17 October, 2 p.m. John F. Gardener, former President of Myrin Institute; former Director of Waldorf Teacher Training, Adelphi College, "Should Governments Mandate Curriculum?" 116 Education South.

Ophthalmology

18 October, 9 a.m. Ingo Rentschler, Professor of Medical Psychology, Institute for Medical Psychology, University of Munich, "Psychophysical Assessment of Visual Function in Amblyopia." Spon-

sored by the Endowment Fund for the Future. 2-137 Clinical Sciences Building.

Music

Department of Music

15 October, 8 p.m. Nicholas Arthur Kilburn Memorial Concert Series—Guy Fallot, cello. Convocation Hall.

Sports

Football

6 October, 2 p.m. Golden Bears vs. Manitoba. Varsity Stadium.

Cross-Country

6 October, noon. Golden Bear Open. Kinsmen Park.

Soccer

12 October, 2 p.m. Golden Bears vs. Calgary. Victoria Soccer Field.

13 October, 2 p.m. Golden Bears vs. Lethbridge. Victoria Soccer Field.

Volleyball

12 and 13 October. Golden Bear and Panda—Junior and Senior High Tournament. Pavilion, Varsity Gym, Education Gym.

Matters of Faith

Catholic Campus Ministry

St. Joseph's College Mass Time, September to April. Monday, Wednesday, Friday - 7:30 a.m., 12:10 and 4:30 p.m.; Tuesday, Thursday - 7:30 a.m., 12:30 and 4:30 p.m.; Saturday, 4:30 p.m.; Sunday - 9:30 and 11 a.m., 4 and 8 p.m.

Until 21 November, Wednesdays, 7:30 p.m. Understanding Catholicism, a series of nine two-hour lectures dealing with aspects of the Catholic faith. Telephone Marcia, 433-2275, for more information.

Non-Credit Courses

Computing Services

MTS (Michigan Terminal System)

MTS and Editor Fundamentals (Prerequisite) AJ510 Operation and Visual Editing (Prerequisite) MTS Overview (Prerequisite)

TEXTFORM

Introduction to Text Formatting (Prerequisite)

SPIRES

Introduction to SPIRES (Prerequisite) Advanced SPIRES

Graphics

Integrated Graphics Overview (IG)

Statistics

Data Preparation for Statistical Packages (Prerequisite) Introduction to SPSSx

SPSSx Conversion

Introduction to BMDP
Introduction to MIDAS
Introduction to MINITAB
Introduction to TROLL

Microcomputers

Introduction to the IBM PC

Introduction to the Personal Editor

The above courses are offered regularly through the day with limited evening selections. Registration will be taken over the phone for all courses except evening courses. These may be made in person at 352 General Services Building, or by mail. Payment must accompany registration for all evening courses. Please make cheques payable to the University of Alberta.

Waiting List Courses

The following courses are only offered when a sufficient number of people express an interest.

Advanced Text Formatting
Courier Operation and Visual Editing
Introduction to Plotting
Introduction to Programming
Introduction to Typesetting

Introduction to APL
Introduction to the Array Processor
Introduction to APAL

Introduction to Clustan

Introduction to TSP
Introduction to Osiris

For more information on any of the courses listed above, telephone the Training Assistant at 432-2511, between 8:30 and noon, weekdays.

Faculty of Extension

Liberal Studies

The general interest brochure is now available by calling 432-3033. The course offerings include the following:

Japanese Society Through the Eyes of Some Modern Novelists
Domestic Life & the Law

The Jewish Experience and the Holocaust

Canadian Writers in Film & Fiction

What Are Our Children Learning From us About Prejudice?

Business and Professional

For further information on the courses listed below, telephone 432-5066.

Employee Discipline and Complaint Handling
Effective Speaking for Business and Professional People

Computer Literacy for Business: Putting Computers to Work for You

The Art of Negotiating...With Anyone

The Creative Genius Within: A Workshop on Creativity, Problem Solving and Innovation

Real Estate Programs

The Real Estate Composite Brochure can be obtained by calling 432-5060. Some of the course offerings are as follows:

Practical Apartment Caretaking
Selling Your Own Home
Property Management for Apartment Caretakers
Real Estate in Distress
Home Renovation and Refurbishing

Certificate Programmes

For further information on the programmes listed below, telephone 432-5545 or 432-3027 between 8:30 a.m. and 4:30 p.m., Monday to Friday.

Management Development

Personnel Administration
Computers and Business Data Processing
Industrial Security Management
Purchasing Management Development

Citation Programme

For further information on the following programme, telephone 432-5545 or 432-3027.
Executive Development Programme for Women

Land Use Planning

For further information on the courses listed below, telephone 432-2912.

Managing an Architectural Practice

Urban Design

The Public Participation Process

Planning Law

Science and Technology

For further information on the courses listed below, telephone 432-2912.

Understanding the Potential of Computer-Assisted Design

The Public Participation Process

The Chemistry of Boiler Systems

Maintenance Management

Applied Behavioral Sciences Division

For further information on the courses listed below, telephone 432-5069.

Stress Management

Face to Face Communication—Rapport Building

Effective Communication and Helping Skills for Volunteers Working with Adults

Managerial Style and Conflict Management

Release Your Brakes

Devonian Botanic Garden

For further information on the courses listed below, telephone 987-3054.

Hydroponics for Beginners

Pictorial Plant Marquetry

Solar Energy and the Home Greenhouse

Moose Hair Tufting

Landscape Design

Notices

Campus Reviews

As part of the process of carrying out systematic reviews under the guidance of the President's Advisory Committee on Campus Reviews (PACCR), the *Office of Community Relations* is completing the self-study phase of the review process. The other major phase of the process is the site visit and assessment by the Unit Review Committee. In preparation for this second phase, PACC invites written comment prior to 15 November 1984.

Submissions are for the use of the Unit Review Committee and will be held in confidence by the members of that committee. Submissions should be sent to: Mrs. L. Pearson, PCCR Office, W4-13 Chemistry Building, Attention: The Community Relations Unit Review Committee.

Campus Law Review Committee

The above committee will meet to consider revisions to the Code of Student Behaviour on 9 October at 9:30 a.m. in 3-17 University Hall.

Would those who wish to make oral or written submissions contact the Secretary to the Committee, Mrs. P. Plaskitt, at 2-1 University Hall, 432-4715.

Child Centre Openings

A few openings recently became available at the University of Alberta's Child Centre. The Centre offers an individualized program for children aged 4 to 5 years. Classes run from the beginning of September to mid-June, Monday through Friday, from 9 to 11:30 a.m. or 1 to 3:30 p.m. Fees are \$60 per month. Applications may be obtained by calling Antonella at 432-4273.

Projection Bulbs Available

Audio-Visual Services (L2-6 Humanities Centre), an adjunct of Technical Services, has available a wide selection of current bulbs for audio-visual equipment. There is also a selection of bulbs with older reference letters as follows: BCK, BDK, CAR, CBJ, CDJ, CDK, CCM, CHG, CLS, CLX, CTT, CXR, CZA, CZX, DAK, DAH, DCF, DEJ, DFV, DHT, DVY, DYP, EDK, EKS, EKG, ELS, ENG, Beckman 8333, Marc 300/16.

Positions Vacant

The University of Alberta is an equal opportunity employer but, in accordance with Canadian Immigration requirements, these advertisements are directed to Canadian citizens and permanent residents.

Senior Demonstrators, Department of Genetics, Winter Session 1984-85

To demonstrate laboratory experiments and grading for Biology 297 (Heredity). Covering the cellular and molecular basis of the transmission of hereditary characteristics; Mendelian inheritance and its cytological basis; DNA as genetic material; gene action; the genetic code. This course is scheduled for the day division, 7 January to 30 April. Salary and number of sections to be taught are negotiable depending on experience and available time.

Applications, including curriculum vitae with the names of three referees, should be sent to: Dr. David Nash, Chairman, Department of Genetics, University of Alberta, Edmonton, Alberta T6G 2E9.

Closing Date: 2 January or when the positions are filled.

Chairman, Department of Elementary Education

Applications are invited for the Chairman of the Department of Elementary Education, Faculty of Education. Applications must be received by 31 October 1984. Address enquiries and applications to: R.S. Patterson, Dean, Faculty of Education, University of Alberta, Edmonton, Alberta T6G 2G5.

Chairman, Department of Secondary Education

Applications are invited for the Chairman of the Department of Secondary Education, Faculty of Education. Applications must be received by 31 October 1984. Address enquiries and applications to: R.S. Patterson, Dean, Faculty of Education, University of Alberta, Edmonton, Alberta T6G 2G5.

Chairman, Department of Educational Administration

Applications are invited for the Chairman of the Department of Educational Administration, Faculty of Education. Applications must be received by 31 October 1984. Address enquiries and applications to:

cations to: R.S. Patterson, Dean, Faculty of Education, University of Alberta, Edmonton, Alberta T6G 2G5.

Administrative Officer, Department of Computing Science

Applications are invited for the position of Administrative Officer, Department of Computing Science. The Department of Computing Science is currently involved in an expansion program to meet increased student enrolments.

Duties: The Administrative Officer reports directly to the Chairman and is primarily responsible for budgets (capital, trust and computing budgets), personnel management, student registration, timetabling and laboratories, and is secretary to various Departmental committees. Liaison with other departments and academic units is an important function.

Education: BSc (minimum), with education or experience in computing preferred. Salary: \$27,216 to \$40,824. Expected appointment date: 1 December 1984. Closing date for applications: 19 October 1984.

Applications, including a résumé and the names of three references, should be sent to: Dr. Lee J. White, Chairman, Department of Computing Science, 615 General Services Building, University of Alberta, Edmonton, Alberta T6G 2H1.

Research Associateship, Boreal Institute for Northern Studies

The Boreal Institute for Northern Studies invites applications for one research associateship to commence 2 January 1985. The position is for eight months (2/3 time), with the possibility of renewal depending upon funding. Minimum qualifications are a master's degree in one discipline and strong research experience, preferably with a northern orientation. Applications will be assessed on the basis of the academic merits of a research proposal dealing with Northern Alberta, N.W.T., or the Yukon. Part of the responsibility of the appointee will be to seek continuing funding for his/her project, and to contribute to the Institute's research function.

Submit research proposal, curriculum vitae and names of three referees before 1 November 1984 to: Dr. A.S.A. Mohsen, Associate Director, Boreal Institute for Northern Studies, CW-401L Biological Sciences Building, University of Alberta, Edmonton, Alberta T6G 2E9.

Part-time Instructors, Department of Computing Services

Computing Services offers a non-credit training program on the use of MTS and some MTS programs and packages. Limited training for the IBM PC is also offered. The demand for these courses is such that people outside Computing Services are invited to teach some of them part-time. The following courses are planned for the 1984-85 term: MTS and Editor Fundamentals, Advanced MTS and Visual Editing, AJ510 Operation and Visual Editing, MTS Overview, Introduction to TEXTFORM and Introduction to the IBM PC.

If there are enough users interested, other MTS programs or topics can be taught to capitalize on the instructors' special interests.

Anyone with experience as a user of MTS or TEXTFORM is invited to apply. The courses are at the beginner level. What is required is an ability to relate well to new MTS users and to explain in clear and simple fashion the basics of MTS and TEXTFORM.

The courses are taught mostly during weekdays, with some evening classes available. The class format is a combination of lecture and terminal laboratory practice.

The salary for these teaching positions is \$15.03 per hour.

Enquiries should be directed to Marilyn Francis, Training Coordinator, 432-2261, 318 General Services Building.

Non-Academic Positions

To obtain further information on the following positions, please contact Personnel Services and Staff Relations, 2-40 Assiniboia Hall, telephone 432-5201. Due to publication lead time and the fact that positions are filled on an on-going basis, these vacancies cannot be guaranteed beyond 28 September 1984. For a more up-to-date listing, please consult the weekly Employment Opportunities Bulletin and/or the postings in PSSR.

Assistant Systems Control Clerk (\$1,205-\$1,442 Comptroller's Office

Data Entry Operator I (\$1,244-\$1,497) Central Stores

Senior Financial Records Clerk (Term)

(\$1,294-\$1,561) Housing and Food Services Clerk Steno II (Trust) (\$1,294-\$1,561) Biochemistry

Clerk Steno III (Term) (\$1,294-\$1,561) Boreal Institute for Northern Studies

Clerk Typist III (\$1,294-\$1,561) Housing and Food Services

Secretary (Trust) (\$1,442-\$1,766) Neurosurgery

Secretary (Trust) (\$1,442-\$1,766) Health Services Administration and Community Medicine

Secretary (\$1,442-\$1,766) Zoology

Secretary (\$1,442-\$1,766) Alumni Affairs

Library Assistant II (\$1,497-\$1,842) Rural Economy

Technician I/Technologist I (Trust) (\$1,497-\$2,092) Home Economics—Foods and Nutrition

Public Relations/Publications Assistant II

(\$1,625-\$2,003) Computing Services

Technician II/III (\$1,697-\$2,378) Home Economics

Technologist I/II (Trust) (\$1,697-\$2,378) Genetics

Administrative Assistant (Term) (\$1,842-\$2,280) Housing and Food Services

Administrative Assistant (\$1,842-\$2,280) Housing and Food Services

Administrative Assistant (\$1,842-\$2,280) Dean of Dentistry

Animal Technician III (\$1,920-\$2,378) MSB Animal Unit

Public Relations Assistant III (\$2,007-\$2,486) Community Relations

Nurse Practitioner (Trust) (\$2,486-\$3,009) Pediatrics

For vacant library positions, please contact the Library Personnel Office, Basement, Cameron Library, telephone 432-3339

Advertisements

Advertisements must reach the Editor by 3 p.m. on the Thursday prior to publication date which date also serves as the deadline for cancellation of advertisements. The cost of placing advertisements is 30 cents per word with no discount for subsequent insertions. There is a maximum limit of 30 words and a minimum charge of \$1.50. Contributors' corrections will be assessed at \$1.50 for each line in which an insertion is made. Advertisements cannot be accepted over the telephone. All advertisements must be paid for in full at the time of their submission.

Accommodations available

For sale - Recently renovated, four-bedroom house, 2,010 sq. ft., Garneau. Enquiries, 431-0208.

For sale - Malmo. Super buy. Four-bedroom bi-level with two fireplaces, family room and double garage, beautiful back yard. Asking \$82,900. Ed Lastiwka, 437-4984, 437-7480. A.E. LePage.

For sale - Saskatchewan Drive. Deluxe, three-bedroom split-level with magnificent view. Huge lot, absolutely immaculate condition. Reduced to \$169,500. All offers considered. Ed Lastiwka, A.E. LePage, 437-4984, 437-7480.

For sale - Beau Park. Excellent, three-bedroom, semi with nice revenue suite. Beautifully landscaped, quiet crescent location. Asking \$92,000. Ed Lastiwka, A.E. LePage, 437-4984, 437-7480.

For sale - Garneau Place, \$59,900. Immaculate, one-bedroom unit with heated parking. Offers, Ed Lastiwka, A.E. LePage, 437-4984, 437-7480.

For sale - Belgrave. Unique, three-bedroom split-level with "Dreger" kitchen. Front drive garage with unistone driveway. Super location. Asking \$92,500. Ed Lastiwka, A.E. LePage, 437-4984. Shared accommodation - Available immediately, four blocks from campus. Rent \$225/month. 439-4871.

Rent - Modern, three-bedroom house in Millwoods. Five appliances, built-in vacuum system. \$550/month. Lease and damage deposit required. 463-3804 after 6 p.m.

For rent - Two-bedroom apartment, 6815 112 St. \$370. After 5:30 p.m., 461-5351.

Rent - Partly furnished, two bedrooms, large basement suite, ten-minute walk to Clinical Sciences Building, on direct bus route to University. Contact Aung or Naing, 433-0420 evenings.

Sale - \$39,500. One or two-bedroom condos. Appliances included. Immaculate, beautiful, large grounds. Walk to University. Ask for Chris Tenove, 433-5664, 436-5250. Spencer's.

Sale - \$79,900. Condo. Includes pool, sauna, jacuzzi, underground parking. Five appliances. Good financing. Chris Tenove, 433-5664, 436-5250. Spencer's.

Sale - Remodelled home with office or studio possible, if desired. Lots of land. Lots of room. Close to University. Good financing. Ask for Chris Tenove, 433-5664, 436-5250. Spencer's.

Sale - Woodcroft home with character. Quick access to University. Immaculate, 1,380 sq. ft. \$68,000 at 12%. Owner moving east. Large lot. Chris Tenove, 433-5664, 436-5250. Spencer's.

Sale - \$69,000. Immaculate, attractive, two-bedroom condo. Five appliances. 1 1/2 baths. Campus two blocks. Ask for Chris Tenove, 433-5664, 436-5250. Spencer's.

Accommodations wanted

I need a four-bedroom house, close to University, beginning 1 January 1985 until spring/summer 1985. References available. Neil Campbell, 439-0603.

Wanted to rent - Visiting professor and wife from University of Western Australia require furnished apartment, January through May, walking distance to campus. Call H.T. Lewis, Anthropology, 432-5469, or home, 433-4369.

Automobiles and others

'76 Suburban GMC 4x4. Great for fishing, hunting, hauling kids. Under 88,000 miles, p.s., p.b., air conditioned, tape, tilt wheel, etc. Exceptionally clean, mechanically sound, some rust. \$3,500. 432-2836, 962-3467 evenings.

Goods for sale

Used IBM selectric and new electronic typewriters. Mark 9, HUB Mall. Open evenings. Saturdays. 432-7936.

Books bought and sold - The Edmonton Book Store in HUB Mall will pay cash for book collections and individual, rare items. Appraisals available. Open seven days a week. 433-1781.

Oriental carpets: Quality older and newer hand-knotted Turkoman and Baluch rugs, prayer carpets, kilims and saddlebags. 439-6408.

Celestion Dition 662 loudspeaker, superb "British" sound, 18 months, offers. Sae A501 AMP 250 w/ch, offers. 435-3234.

Binoculars "Swift" widefield, 8.5x44, \$65. Tennis racquet "Sarsun silver", metal, \$20. 482-1155 evenings.

Drapes: two pair 126x94" long, one pair 74x94", \$225 for all. 482-1155 evenings.

Child's rocker, \$17. Room darkening shade (IKEA's Konrad, 4'x6"), \$30. 425-8744.

Exceptionally beautiful, solid, large, teak buffet \$2,400 value. Sacrifice at half. 425-8744.

Services

Donni Word Processing. Specializing in theses, manuscripts, etc. 8315A 105 St. 432-1419.

Singing teacher, Eileen Turner, 439-4661.

Academic staff: Supplementary healthcare reimburses treatment costs for backaches, stress tension at Back Basic Therapy. Maria Krieg, university-trained in Düsseldorf, offers: Heat, massages, chirogymnastics, interferential electrotherapy. 436-8059, 11627 75 Ave.

Experienced architect: House designs/renovations. Call for consultation. 973-3198 (local).

Voice lessons: Alexander Tumanov, 481-3710.

Competent house cleaning service, licenced and insured. For information, phone 424-8490.

JL Citation Services. Computerized literature searching by experienced scientists. Full searches, automatic updating. Search strategies carefully formulated. Maximum 50 descriptors per topic. 487-8652

Photocopying 8¢, word processing \$24/hour, speed typing course, word processing course, cerlox binding, typewriter repair. Mark 9, HUB Mall. Open evenings, Saturdays. 432-7936.

English nanny, many years' experience Canada and overseas, available January 1985 or earlier if necessary. References supplied. Phone 452-3516.

English lessons by experienced ESL teachers, private or group instruction in TOEFL prep, conversation and pronunciation available. Reasonable rates. Close to University. 437-2660.

French tutoring, all levels. 437-2660.

Consider Black Cat Ranch for part of your Christmas holidays. Excellent cross-country skiing, good home cooking and relaxed atmosphere. Black Cat Ranch, Box 976, Hinton, Alberta T0E 1B0. Phone 866-2107.

Piano and theory teacher, Lillian Buckler, Blue Quill area. 435-8134.

Ridley College - Independent school since 1889, now co-educational. St. Catharines, Ontario. Headmaster will be available 4-5 October. 432-2067 for information.

MTS USERS

A terminal is now available with features similar to an AJ510—plus some extras.

2 4 PF keys—A Visual Editor Programmable function keys

The U of A ELAN Terminal available from:

Multiflex Technology Inc.
319 College Street
Toronto, Ontario
M5T 1S2 (800-268-3798)

at a modest cost of \$700

Required display monitor
—amber ZVM 122—\$139
—green ZVM 123—\$129

A modem is needed if you want to talk to MTS through your telephone

\$100—300 baud
\$495—1200 baud

Faculty of Pharmacy
Terminal Project
Call 5304 or 4203



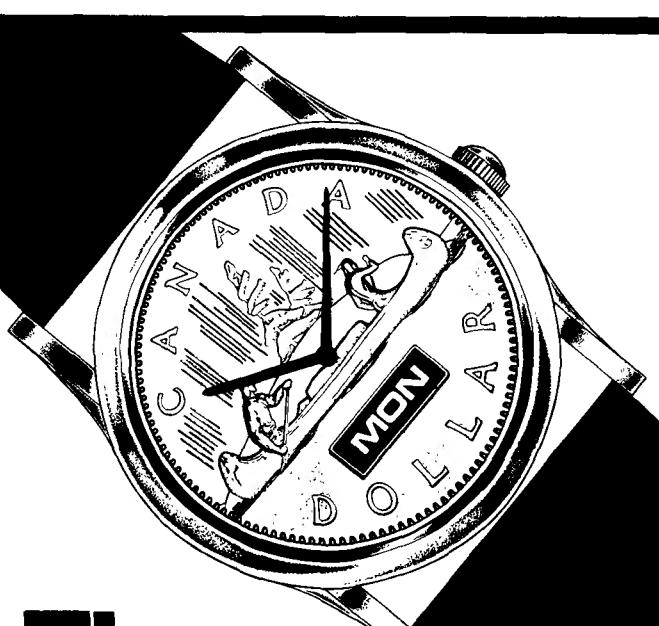
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